

# **MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT, ENVIRONMENTAL HEALTH DIVISION**

## **CONSTRUCTION GUIDE FOR FOOD ESTABLISHMENTS**

**Plan Review Office: 1001 N. CENTRAL #350, PHOENIX, AZ 85004 602-506-6980**

**INTRODUCTION** - This Construction Guide is available to any person intending to construct or remodel a food establishment in Maricopa County. It is intended as a general overview of our requirements and should not be considered all inclusive. Please contact our offices at the above numbers if you require further information regarding your particular plan.

**PLAN CHECK FEES** - Plan check fee shall be paid at the time of plan submittal.  
SEE ATTACHED

**MAKE CHECK PAYABLE TO : M.C.E.S.D. OR MARICOPA COUNTY  
ENVIRONMENTAL SERVICES DEPARTMENT.**

A remodel is an alteration to the structure or equipment of an existing food establishment (this information is to be confirmed by Environmental Health's staff or by a site survey or inspection).

### **PLAN SUBMITTAL**

**NOTE: USE WHITE PAPER ONLY, DARK INK ONLY. MINIMUM SIZE OF PLAN MUST BE 8.5 X 11, OR LARGER.**

**BEFORE CONSTRUCTING, ENLARGING, ALTERING OR CONVERTING ANY BUILDING FOR USE AS A FOOD ESTABLISHMENT, COPIES OF DETAILED PLANS AND SPECIFICATIONS MUST BE SUBMITTED TO THE MARICOPA COUNTY DIVISION of ENVIRONMENTAL HEALTH, 1001 N. CENTRAL #100 PHOENIX, ARIZONA, 85004.**

Plans shall be drawn to scale, e.g. 1/4" = 1'" if no, scale, give all pertinent dimensions. Plans submitted shall include the following:

1. Complete floor plan with plumbing and electrical lighting: (type and location of lights).
2. Complete equipment layout. Elevations of equipment, if available.
3. Complete exhaust ventilation plans (HVAC) including make-up air for hoods & toilet room exhaust.
4. Finish schedule for walls, ceiling and floors that indicates the type of material, the surface finish, the color and the type of coved baseboard at the floor-wall juncture.

5. Show toilet rooms and location in relation to food preparation area.
6. Plumbing site plan.

Plans that are incomplete, and plans that have a multitude of changes will be returned for revision before approval may be granted.

If any changes are desired after approval has been obtained, additional approval must be obtained for such changes.

Approved materials and good workmanship are significant factors in the evaluation and approval of food establishment construction and equipment installation.

### **FINAL INSPECTION**

Upon completion of 100 percent of the construction, including all finish work, you must call the INSPECTOR assigned to review your plans to arrange for a final inspection. You will not be issued a Health Permit until you pass a final inspection. In no case should a final inspection be requested less than two working days prior to the proposed opening of the establishment.

### **GENERAL CONSTRUCTION AND EQUIPMENT REQUIREMENTS**

The plans shall show and specify in detail the following:

1. **FLOORS:** Floors in food establishments (customer's area requirements are less stringent) shall be smooth and impervious to water, grease and acid, and, be of easily cleanable construction. A coved base is required in all kitchen food preparation, janitorial and toilet areas and possibly other areas, depending upon the use activities. Samples or specifications of flooring other than concrete shall be submitted with plans. Concrete floors are acceptable when properly installed, smooth finished and sealed with approved commercial concrete sealers specific for this purpose.
2. **WALLS:** Walls in kitchen, food preparation areas and dishwashing areas shall be smooth and nonabsorbent, with a light-colored, easily cleanable finish. (Note: Brick, rough concrete, rough stone, plaster, or similar surfaces are not acceptable.) Material other than smooth plaster, putty coat plaster, drywall with sealed and taped joints, plywood with properly sealed joints, F.R.P., or fiberglass wall panel with properly sealed joints require submission of a sample. All surfaces shall be sealed with a high gloss enamel, epoxy, varnish, or other approved sealer or wall covering. Other wall surface materials are subject to evaluation and compliance with the same or similar requirements prior to installation.

Wall surface requirements in customer areas are less stringent. Metal, ceramic tiles, F.R.P. panels are also approved in heavy use wet or cooking areas.

3. **CEILINGS:** Ceilings in kitchen, food preparation, and utensil washing areas shall be smooth and nonabsorbent, with a light colored, washable finish. Acoustical tile may be approved if:
  - a. It complies with the above requirements.
  - b. A SAMPLE IS SUBMITTED AND APPROVED.
  
4. **CONDUIT:** All plumbing, electrical, and gas lines shall be concealed within the structure to as great an extent as possible. Where it is not possible, all runs shall be at least 1/2 inch away from the walls or ceiling and four to six inches off the floor. Where conduit or pipe line enter a wall, ceiling or floor, the opening around the line shall be tightly sealed. Conduit or pipe lines shall not be installed across any aisle, traffic area or door opening at or near the floor surface.  
Multiple runs or clusters of conduit or pipe lines shall be furred in, encased in an approved runway or other Environmental Health approved, sealed enclosure.
  
5. **HOODS AND DUCTS:** A hood or duct shall be installed at or above all food heat processing equipment. All hoods, ducts, and exhaust outlets shall be installed in accordance with the current edition of the Uniform Mechanical Code. All joints and seams shall be tight, welded or soldered for ease of cleaning. Riveted seams are not acceptable. Mechanical exhaust ventilation shall be required at or above all cooking equipment such as ranges, griddles, ovens, deep fat fryers, barbecues and rotisseries to effectively remove cooking odors, smoke, steam, grease and vapors. All seams around hood metal work shall be tight and properly sealed.
  - a. **Canopy-Type Hoods:** Canopy-type hoods shall not be more than seven feet above the floor and shall not be more than 3 1/2 feet above the cooking surface. The hood shall extend at last six inches beyond all sides of the units served. It shall have grease troughs or drip pans that are easy to clean.
  - b. **Non-Canopy Type Hoods:** Non-canopy type hoods will be approved providing they are constructed to be easily cleanable and they comply with the minimum exhaust air velocity requirements. Shielding at the ends may be necessary to prevent interference from cross drafts.
  - c. **Make-up air:** Make-up air shall be provided at least equal to 100% of the amount which is mechanically exhausted.
  - d. **Fire Extinguishing Systems:** Fire extinguishing systems may be required by local fire department codes. They shall be installed so as to not obstruct the easy cleanability of the hood-duct system.
  - e. Walls behind cooking equipment shall be covered with metal or ceramic tile and have a coved metal or tile floor-wall juncture.

6. **REFRIGERATION:** All refrigeration units shall comply with the following requirements:
- a. Be capable of operating below 45°F at all times.
  - b. Be provided with an accurate thermometer.
  - c. Have shelving that is nonabsorbent, noncorroding, and easily cleanable. **No** wood construction.
  - d. Open into an approved food preparation area of the building.
  - e. Have smooth, nonabsorbent and easily cleanable surfaces. Metal, ceramic tiles, and F.R.P. board are the only interior materials accepted.
  - f. Condensate waste from reach-in units may be drained into a floor sink, floor drain or other approved plumbing fixture.

**Walk-in Boxes shall also:**

- a. Have a cove base with a radius of at least 3/8 inch at floor/wall juncture (metal, tile, cement or factory installed rubber are the only materials to be used).
  - b. have shelving that is at least six inches off the floor with round metal legs or cantilevered from the wall for ease of cleaning.
7. **ICE MACHINES:** All ice machines shall be located within the building in an easily cleanable area and shall be drained to a floor sink or floor drain. Leave a minimum one (1") inch air gap between bottom of drain lines and tops of floor drains.
8. **FLOOR SINKS:** Floor sinks or drains shall be installed flush with the floor surface or as required by the local plumbing departments. All condensate and similar liquid waste shall be drained by means of indirect waste pipes into an open floor sink. Horizontal runs of drain lines shall be at least 1/2 inch from the wall and four to six inches off the floor and shall terminate at least one inch above the overflow rim of the floor sink. Floor sinks shall be located so that they are readily accessible for inspection, cleaning and repair. The floor sink must be within 15 feet of the drain opening of the equipment served. Waste lines may not cross any aisle, traffic area or door opening at or near the floor. Floor sinks or floor drains are not permitted inside refrigeration walk-in boxes.
9. **EATING AND DRINKING UTENSIL SINKS:** Where multi-use eating and drinking utensils are washed by hand (see exception when dishwasher is used), a three-compartment sink with dual, all metal drainboards shall be provided. The drainboards shall be not less than 16 inches in length.

10. **KITCHEN UTENSIL SINK:** Where multi-use kitchen utensils (pots and pans) are washed by hand, there shall be provided at least a three-compartment sink with drainboards of all metal construction. The minimum compartment size shall be at least 18" x 12" deep with minimum 18 inch drainboards; however, the sink must otherwise be capable of holding the largest utensil and the drainboards shall be as large as the largest sink compartment. All sinks must meet N.S.F. standards. Sink faucet(s) must reach all compartments and be mixing type.
11. **DISHWASHING MACHINES:** All dishwashing machines must be approved by the National Sanitation Foundation . All spray type machines which are designed for a hot water bactericidal rinse shall be provided with a booster heater that meets the requirements of Standard No. 5 of the National Sanitation Foundation, or be connected to an approved recirculating water system which is capable of maintaining the rinse water at not less than 180°F. The dishwasher must also be provided with thermometers and pressure gauges to indicate the proper water flow pressures and temperatures. Appropriate valves for testing the accuracy of the gauges and thermometers shall also be properly installed. Dishwashers are required to drain into a floor sink unless equipped with a scrap tray with an overflow design.
12. **JANITORIAL SINK:** A single-compartment, wall-mounted or floor-mounted janitorial sink with hot and cold running water shall be provided and installed for general clean up activities in all food handling businesses. Cement tubs are not acceptable. However, curbed areas with a drain, that are provided with hot and cold water, a mixing faucet, and an approved backflow prevention device, may be acceptable. All curbed area surfaces shall be of smooth, impervious, and easily cleanable construction. Curbed area shall have minimum four inch high curb and be at least three feet square or larger in size.
13. **HANDWASHING SINKS:** Lavatory sinks shall be provided in the food preparation areas. Soap and towels shall be provided in single-service dispensers or air dryers at all lavatory sinks.
14. **GENERAL PURPOSE HOT WATER:** Provide a hot water system capable of supplying 120°F water to all sinks, hand lavatories and other clean-up facilities during periods of maximum demand. Water temperature quoted is minimal and may be higher.
15. **DIPPER WELL:** A running water dipper well must be provided if scoops are used for dipping frozen desserts. The dipper well shall be drained to a floor drain. (Clean and dry storage allowed for limited or small operation).
16. **WINDOW SCREENS:** All openable windows, e.g. restroom windows, shall be screened with not greater than 16 mesh screen.
17. **SERVICE OF FOODS DIRECTLY TO OR BY THE CUSTOMER:** Sneeze guards shall be installed at all displays of unpackaged foods that are

accessible for service to or by customers. (See N.S.F. bulletin for detailed requirements of size and design).

18. **BACK-UP FOOD STORAGE:** Adequate and suitable floor space shall be provided for the storage of food and beverages. In addition to working storage, (i.e., wall mounted shelves and cabinets over food preparation equipment or under counter storage shelves) additional back-up storage space, reference the following:

-25% of the food preparation area, or one square foot per seat, whichever is greater, but not less than a total of 100 square feet of floor space.

-At least 32 linear feet of shelving units, a minimum of 18 inches deep, should be installed in the minimum 100 square feet of floor space provided. (Check with Environmental Health for recommended number of tiers for shelving units).

Shelving shall be constructed in an easily cleanable design of smooth metal or wood which has been finished and sealed. Shelves installed on a wall shall have at least a one inch (1") open space between the back edge of the shelf and the wall surface, otherwise, the back edge of the shelf shall be sealed to the wall with silicone sealant or equivalent. The lowest shelf shall be at least six inches above the floor, with a clear unobstructed area below or the upper surface of a completely sealed four inch minimum height base. All shelves located below a counter or work surface shall be set back at least two inches from the drip line of the surface above. If shelves are supported by legs on the floor, the legs shall be round metal or tubular.

19. **RESTROOMS:** Toilet facilities shall be provided on the premises of each food establishment conveniently accessible for the employees. The floors, walls, and ceilings shall have surfaces that are smooth, non absorbent, light in color and easily cleanable. Handwashing lavatories shall be provided within or adjacent to the toilet rooms. The lavatory shall be provided with hot and cold water in a mixing type faucet. Soap and towels in single service dispensers, or air dryers shall be provided at the lavatory sink. The restrooms shall be provided with tight fitting, self-closing doors. Ventilation is to be provided by mechanical means to the exterior air.

20. **DELIVERY DOORS:** All delivery doors leading to the outside shall open outward, be self-closing, and **may** require an overhead air curtain. The air curtain, when installed inside the building, must produce a downward-outward air velocity of 750 feet per minute minimum over the entire opening down to a point three feet above the floor and turn on automatically when the

door is opened. When installed outside the building, the same velocity of air must be directed straight down over the entire door opening.

21. **CUSTOMER'S DOORS:** All entrance doors leading to the outside shall open outward and be self-closing.
22. **LIGHT:** All bar and fountain glass washing sinks, all dishwashing areas, and all food preparation areas, shall be provided with at least 20 foot candles of light, 30 inches above the floor. Utensil storage rooms, toilet rooms, and dressing rooms shall be provided with at least 20 foot candles of light.
23. **EQUIPMENT:** All show and display cases, counters, shelves, tables, refrigeration equipment, sinks and other equipment used in connection with the preparation, service and display of food, shall be made of non-toxic materials and so constructed and installed as to be readily cleaned. All equipment shall be placed on sanitary legs with a minimum height of six inches, on a four inch coved base, on approved casters or cantilevered from the wall in an approved manner.
24. All equipment design, construction and installation is subject to Environmental Health's approval. The National Sanitation Foundation standards are used as a guide for equipment evaluation and approval, except where strict compliance with the NSF standards is a specific requirement.

**PLAN CHECK FEES** - (Multiple kitchens or multiple facilities will require multiple fees).

**FOOD ESTABLISHMENTS**

0 - 9 SEATING	\$250
10 + SEATING	\$350
PET SHOPS	\$175
PUBLIC ACCOMMODATIONS	\$300
SCHOOL KITCHEN	\$350
SCHOOL GROUNDS	\$250

**EXPEDITED WILL BE DOUBLE THE FEE. EXPEDITED FEES ARE REQUIRED IF ESTABLISHMENT PLANS TO OPEN WITHIN TWO WEEKS OF SUBMITTING PLANS.**